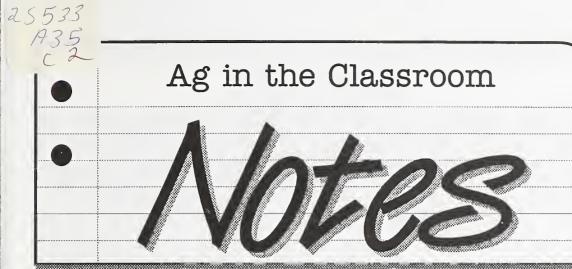
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A bi-monthly newsletter for the Agriculture in the Classroom Program. Sponsored by the U.S. Dept, of Agriculture to help students understand the important role of agriculture in the United States economy. For information, contact the AITC Director, Room 4307, South Bldg., USDA, Washington, D.C. 20250-0991. 202/720-7925.

United States
Department of
Agriculture



NOV/DEC 96 Vol. 11, No. 6



Illinois AgriScience Kits Offer Hands-On Experiments

Science and agriculture are linked together in the study of animals, energy, insects, plants and soils. Students can develop a better understanding of these important subjects as they conduct hands-on experiments. These ten AgriScience teaching kits were created under the direction of the Illinois Committee for Agricultural Education and the Illinois Leadership Council for Agricultural Education.

Scientists and educators from the College of Agricultural, Consumer and Environmental Sciences at the University of Illinois, the Illinois State Board of Education, and the Facilitating Coordination in Agricultural Education staff worked cooperatively to develop the kits. They offer students in grades K-8 a better understanding of subjects ranging from weather's effect on agriculture to incubation and embryology.

The self-contained kits include everything teachers and students will need to conduct experiments, learn scientific methods of observation, organize and record data, draw informed conclusions, explore career opportunities in science and agriculture, and participate in cooperative learning activities. Teachers report that the kits have enriched their science teaching.

In Dairy Delights – Good Nutrition from Milk, students conduct a variety of experiments designed to teach them scientific principles as they are learning more about milk. In "From Milk to Glue," students demonstrate one of the many uses of milk. They learn that the 3.2% protein found in milk is composed of 85% casein, a high quality protein. Casein, a common ingredient of white glue, can be extracted from milk.



Ten exciting
AgriScience
kits will help
students learn
more about
agriculture and
science.



Continued on page 7

From the Director:

This latest edition of *Notes* has news from two states which have not been recently featured. The educational kits from Illinois take a unique approach to instructional materials about agriculture by including *everything* needed to teach and conduct the activities in an all-inclusive kit. Utah's use of science standards to enhance program utilization is one that can be replicated across the United States as each state sets or adopts its own form of standards.

Cotton Now & Then combines history and technology with illustrations and photographs to answer the question, "Where does fabric come from?"

Winter on the Farm completes the Summer on the Farm series of videotapes. We hope the producer will be able to join us at the National Conference in July.

The National Ag in the Classroom Conference is scheduled for Nashua, New Hampshire on July 9-12. The details will be in the next issue of *Notes*, along with registration information.

Mattie Merritt and I wish you happy holidays and a wonderful 1997!

Elizabeth a. Holanyk

Utah Links Agriculture and State Science Standards

As states move toward establishing or adopting state standards in various curriculum areas, some AITC programs are finding innovative ways to use the standards as another way of helping teachers integrate agriculture into their curriculum. Last summer, fifth grade teachers from Utah took part in a workshop that met their state science core curriculum standards.

"Some of the standards and objectives that teachers are required to teach can be greatly enhanced by Ag in the Classroom activities," says Debra Spielmaker, statewide AITC Project Coordinator. In Utah, agriculture provided an especially good vehicle for teaching the science standards and objectives dealing with natural resources.

The workshop, which used a train-thetrainers approach, enrolled one teacher from each of the state's 50 districts. These teachers, in turn, will train their colleagues in how to teach the new science standards by using agricultural activities.



Continued on page 7

Spotlight

Putting Theory Into Practice

Ginger Habel, a fifth grade teacher at Forbs Elementary School in Alpine, Utah, attended the workshop and has already tried some of the activities in her classroom. "I was surprised to learn how little my students knew about agriculture," she says.

"Agriculture was a new word in my students' vocabulary," Habel says. "Through demonstrations, activities, and experiments, we *all* learned that agriculture produces renewable resources."

The children used corn starch to make plastic and learned why corn-based ecofoam packing material is biodegradable. They also used a grass-clipping experiment to demonstrate how livestock grazing affects the range.

"The children were especially startled to learn that just two percent of the population takes care of our soil, water, food, and fiber," Habel says. Later in the year, they will role play about issues facing agriculture and the environment.



renewable resources.



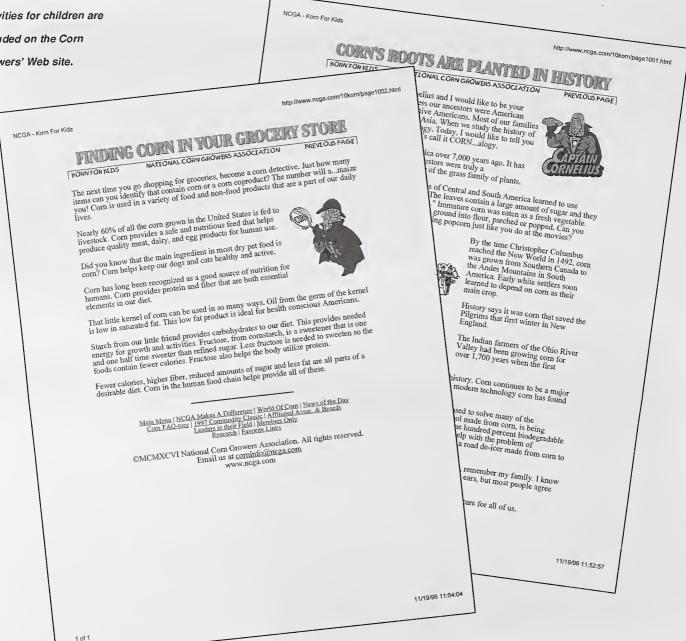
Corn Growers Offer Educational Materials Online

The National Corn Growers Association Web site includes a wealth of material for teachers and students. From a corn word search to an activity called "Finding Corn in Your Grocery Store," this Web site will be fun and educational for elementary school students and their teachers.

There is plenty of other information on corn for middle and high school students, including a glossary of corn terms and up-to-date news about corn. Although many of the materials are copyrighted, teachers are encouraged to print out the information and to use it in their classrooms.

Contact the Web site at http://www.ncga.com

Many educational activities for children are included on the Corn Growers' Web site.



Video Gives Students a Close-Up View of Winter on the Farm

What's it like to spend winter on a farm? Cool, says a new video by Chris Fesko, on whose farm many of the scenes were shot. The 25-minute video shows an aspect of farm life that most non-farm residents never see: winter months.

Winter on the Farm, the third in a series of award-winning videos by the same producer, shows young viewers scenes of everyday chores on the farm. Some, like milking cows and feeding animals, go on year round. Others, like repairing machinery, cutting wood, and collecting and making maple syrup, can either be done only in the winter or are scheduled during that season because more time is available.

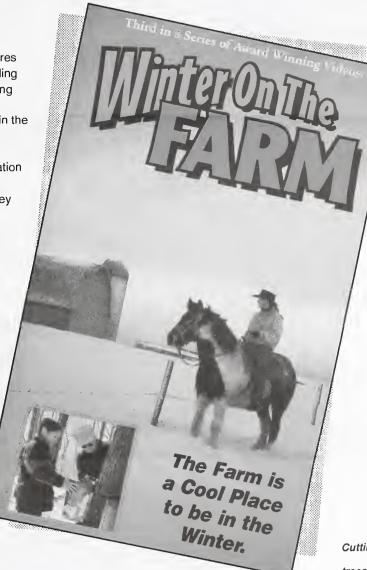
As with other videos by this producer, narration is minimal. Instead, viewers are stimulated to develop their observation and deduction as they learn that farming is a year-round occupation.

Cows give birth during the winter, and the video includes some charming scenes of wobbly-legged calves. Winter on the Farm doesn't miss the educational opportunity to point out that cows need to give birth in order to produce milk.

Visits by veterinarians and farriers let children see that many people play a hand in helping farmers. The video also takes children to visit nearby farms to learn more about wintertime activities.

The snowy scenes in the video are exquisite, and show aspects of both work and play. Scenes of children skating, sledding, and riding in a sleigh are sure to leave viewers smiling.

Winter on the Farm has public viewing rights and an illustrated teacher's manual. Send check or P.O. for \$49.95 to Chris Fesko Enterprises, 1261 East Lake Road, Skaneateles, NY 13152-8909. For credit card orders, call 1-800-747-6470.



Cutting wood, trimming trees, and making maple syrup are all part of Winter on the Farm.



"Where does fabric come from at the start?" Sue asks her mom after a visit to the fabric store. So, in Cotton Now & Then, Sue's mother explains how a

simple cotton seed develops into the colorful cloth she uses in her guilting, comparing modern methods with those of her pioneer ancestors.

This 32-page, full-color book teaches children about cotton fabric from boll to bolt. The catchy rhyming text by Karen Bates Willing and Julie Bates Dock will hold children's attention while giving them lots of interesting facts about cotton.

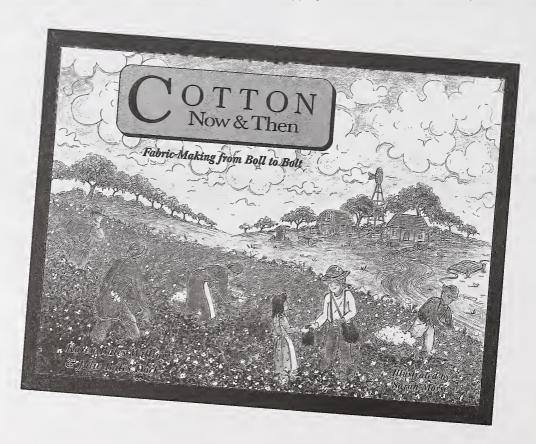
The illustrations combine photography and illustrations. The photos, from the National Cotton Council and Cotton Incorporated illustrate today's high-tech cotton production process. Whimsical illustrations by Sarah Morse offer a glimpse of

times (and production methods) gone by. Each page of text is bordered by a drawing of a fabric sample that might be found in the fabric store. Young readers will also enjoy looking for the cat on every page.

The book includes fascinating facts about past and present cotton production. For example, readers will learn that geese were once used to keep down the weeds in the cotton fields before pesticides were developed.

This booklet would be ideal for students learning how a raw material becomes a finished product. It will also interest children who love to learn how and why things work.

Cotton Now & Then is available from Now & Then Publications, 725 Beach Street, Ashland, OR 97520. The telephone number is 541-482-7935, and the fax is 541-482-7937. Single copies are \$8.95 for each paperback and \$12.95 for each hardback, plus \$3.00 shipping per order (but free shipping for orders of six or more copies).



Children will learn how a cotton seed becomes colorful cloth in Cotton Now & Then.

Kits from page 3

In this activity, casein and other milk solids are separated from the liquid through heating and the addition of vinegar or other acidic substances. The whey is drained from the curds, which are then mixed with baking soda and tap water to form a crude glue. In an enrichment activity suggested for this lesson, students trace the story of dairy products from the farm to the store where they purchased them.

In other activities, students make cultured yogurt and cottage cheese and observe the action of rennin on milk. From the test tubes to a reproducible lab sheet to the rennin tablets, the kit includes everything teachers will need (except the milk).

Dairy Delights is available for \$160.

In Agriculture Renews Our Planet – Growing Energy for the Future, students learn that the earth's supply of oil is a limited resource. It is especially important that students learn the importance of conservation and wise use. One conservation effort involves using ethanol (alcohol made from corn) as a supplement to oil and its derivatives.

To help students learn about using renewable resources, they are introduced to a new product made from 40 percent soybeans, 40 percent recycled newspapers, and 20 percent adhesives. They see some examples of the product, then complete a display board that features soybean products.

In a chromatography experiment, students compare soy-based ink with a petroleum-based ink. They learn that the pigments of the soy ink do not separate, but the pigments of petroleum ink will separate into red, blue, orange, and yellow due to its volatility.

In an activity more appropriate for upper grade levels, students actually distill ethanol in their classroom, using a mixture of corn syrup, yeast, and water. The price for *Growing Energy for the Future* is \$135.

The kits range in price from \$95 to \$185. Consumable items may be replaced at a cost that ranges from \$20 to \$40. For more information, contact the Vocational Agricultural Service, University of Illinois, College of Agricultural, Consumer, and Environmental Sciences, 1401 S. Maryland Drive, Urbana, IL 61801; 217-333-3871.

Kit titles and the grade levels for which they are recommended include:

Eggciting Experiments – Chick Incubation and Embryology (K-8)

Agriculture Renews Our Planet – Growing Energy for the Future (K-8)

Insects – Agriculture's Foes or Friends (K-8)

Probing Our Soils – Getting to the Roots of

Agriculture (2 - 8)

Protein Providers – The Superb Soybean (K-8)

Animals in Agriculture – Their Growth and Development (4 - 8)

Dairy Delights – Good Nutrition from Milk (K-8)

Growing Better Every Day – Using Genetics to Improve Agriculture (6 - 8)

Agriculture Measures Up – Using Mathematics in Agriculture (3 - 5)

Rain or Shine – Weather's Effect on Agriculture (K - 8).

Utah from page 2

During the training, teachers received instruction on subjects that included composting; sustainable agriculture; wildlife management; land issues (open spaces); renewable and recyclable products from agriculture; and soil, water, and range conservation.

Because many of the subjects discussed in the natural resources part of the science curriculum also involve issues on which people may hold widely divergent views, teachers practiced handling sensitive issues in their classrooms. One of the most effective techniques, according to Spielmaker, was an activity that involved a bouncing 13-inch rubber ball. "I wrote the numbers from 1 to 6 on the ball very much as they would appear on a die. Then I asked teachers on different sides of the room to tell us which number they saw. We were all looking at the same ball, but had different perspectives and saw different numbers. When we are looking at issues, it's a good idea to look at all sides *before* we make a decision," she concludes.

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